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GASTROINTESTINAL STROMAL TUMOUR OF STOMACH: A CASE REPORT WITH REVIEW OF LITERATURE

Surgery

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ABSTRACT

A 46 years old male presented with lump in abdomen in left hypochondriac region. His ultrasound abdomen was suggestive of a mass arising from stomach. His CT Abdomen and pelvis report was large isodense soft tissue mass arising from greater curvature of stomach with large exophytic component and less endophytic component. But his endoscopy was within normal limits with no mucosal lesions. His tru-cut biopsy report was spindle cell tumour. So the preoperative diagnosis was spindle tumour of stomach. When he operated by exploratory laparotomy, he was found to have 15*17 cm mass involving the wall of greater curvature of stomach with no intraluminal component. He was operated as proximal partial gastrectomy with esophagogastrostomy. His postoperative period was unconventional. His histopathological report was spindle cell gastrointestinal stromal tumour of stomach. His immunohistochemistry report was strongly positive for c-kit (CD 117). One month after the surgery the patient is healthy without an evidence of metastasis.

KEYWORDS

Gastrointestinal stromal tumors, GISTs, immunohistochemistry, spindle, Stomach.

Introduction :

Gastrointestinal stromal tumors (GISTs) are the most common mesenchymal tumors of the gastrointestinal tract. Although the term gastrointestinal stromal tumor is now preferred, phenotypic overlap between leiomyomas and GISTs exists, especially in that many GISTs show α-smooth muscle actin expression and some show desmin expression [1].

The current annual incidence of 14.5/100,000 population [2]. Most patients with GISTs are asymptomatic although patients with advanced disease may present with symptoms of a mass lesion, abdominal pain, or bleeding. At least 10 to 30% of GISTs are discovered incidentally during laparotomy, endoscopy, or other imaging studies, with 15% to 50% of GISTs presenting with metastatic disease [3]. GISTs initially presenting as an abdominal mass are exceedingly rare, and only 21 such cases have been reported in the world literature.[4] In this paper, we discuss one additional case of GISTs presenting as an abdominal mass admitted at a tertiary care teaching hospital in Pune, India and provide a pertinent review of literature.

Case report :

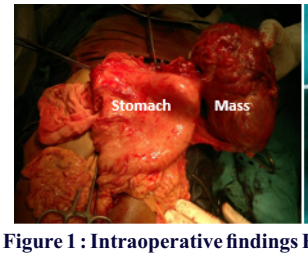
A 46 years old male was brought to our outdoor patient with chief complaints of lump in epigastric and left hypochondriac region since 6 months. The mass was initially small and had gradually increased to the current size. He denied history of vomiting, change in bowel habits, weight loss. Physical examination revealed averagely built middle aged male with heart rate of 70 pm, blood pressure of 126/74 mm Hg. His abdominal examination revealed a mass of 15 * 10 cm in epigastric and left hypochondriac region. It was intra-abdominal swelling as confirmed by leg raising test.

His ultrasound abdomen was suggestive of a large homogenously hypoechoic mass from stomach most probably neoplastic etiology. His CT Abdomen and pelvis report was large isodense soft tissue mass arising from greater curvature of stomach with large exophytic component and less endophytic component. But his endoscopy was within normal limits with no mucosal lesions. His tru-cut biopsy report was spindle cell tumour.

He was operated by upper midline incision and there was presence of a large mass of about 17*15 cm arising from the wall of greater curvature of stomach with small intramural component (fig 1). The mass was separate from the surrounding structures. Proximal gastrectomy was done with two GIA staplers with the continuity done by esophagogastrostomy using circular stapler. The patient had good postoperative recovery.

Macroscopically, the larger component was 18*10*12 cm and smaller was 8*6*5 cm. It was externally bosselated and well-circumscribed. The mucosa of stomach overlying the tumour shows loss of rugae and ulcer. On cut surface, it has variegated appearance soft to firm. At some places it is cystic, necrotic, yellowish or whitish (Fig 2, 3). Microscopically, the tumour shows uniform elongated cells with cigar shaped vesicular nucleiand eosinophilic cytoplasm arranged in interlacing fascicles. At places, palisading pattern is seen (Fig 4) . The histopathology report was spindle cell gastrointestinal stromal tumour of stomach with negative surgical margins. His immunohistochemistry report was strongly positive for C-kit (clone YR145) (Fig 5) and benign gastrointestinal stromal tumour of stomach.

Six months follow-up of the patient revealed no recurrence.



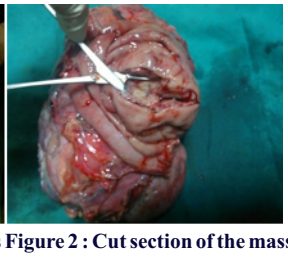


Figure 1 : Intraoperative findings Figure 2 : Cut section of the mass

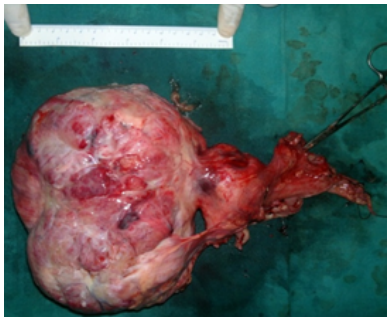


Figure 3: Complete specimen

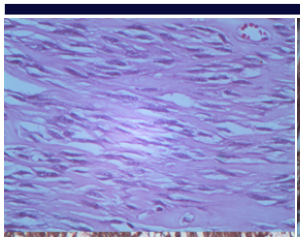


Figure 4 : H & E

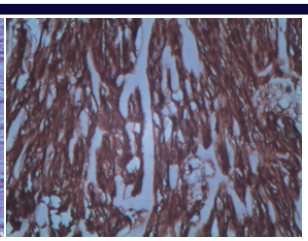


Figure 5 : Strongly c-kit positive staining

Discussion :

GISTs can occur at any age, peak incidence in the fifth and sixth decade. 70% GISTs occur in stomach, 20 in small intestine and 10% in omentumn or mesentry. These tumors are derived from the interstitial cell of Cajal. Loss of heterozygosity of the *NF1* gene and mutation in the proto-oncogene *c-kit* leading to increased expression of KIT and platelet-derived growth factor receptor-alpha are thought to be pivotal [5]. The wild-type KIT receptors appear to signal through the MAP kinase pathway [6] as compared to PI3K-AKT cascade used by *KIT* mutations associated with sporadic GISTs [7].

Microscopically GISTs are classified : spindle cell type (70%), epitheloid type (20%) and mixed spindle cell - epithelioid cell type. On immunohistochemical staining, 95% are CD117 (c-kit) positive, 70% are CD34 and 40% are stain positive for smooth muscle actin. GISTs spread by the hematogenous route to liver and peritoneum.

Abdominal pain and GI bleeding are the most common presenting complaints. Some GISTs of stomach may present as obstructive jaundice.[8] Patients in whom a GIST presents as an abdominal mass are exceedingly rare. In this case, patient had only complaint of abdominal lump. CT abdomen helped to locate the tumor and biopsy was suggestive of spindle cell tumor. Contrast-enhanced CT scan is the imaging modality of choice for patients with suspected abdominal mass, as it helps in both preoperative staging and to evaluate for metastatic disease. CT shows an inhomogeneous mass with areas of necrosis and hemorrhage, while viable tumor areas show contrast enhancement. [9]

Complete surgical resection is the treatment of choice, and biological therapy (imatinib) is recommended for incomplete resection and unresectable or metastatic disease in patients with primary or recurrent disease. [10]

Gastrointestinal stromal tumors are highly aggressive tumors, with uncertain aetiology. Finally, GISTs should be considered in the differential diagnosis of an abdominal mass in adult patients.

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